

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Factors Associated with HIV Testing and Counselling Services among Women and Men in Nepal: A Cross-sectional Study Using Data from a Nationally Representative Survey
<b>AUTHORS</b>	Bhattarai, Navaraj; Bam, Kiran; Acharya, Kiran; Thapa, Rajshree; Shrestha, Bhagawan

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Yumo, Habakkuk A. Ludwig Maximilians University Munich
<b>REVIEW RETURNED</b>	26-Mar-2021

<b>GENERAL COMMENTS</b>	<p>Thank you for the opportunity to review the manuscript titled: "Factors Associated with HIV Testing and Counselling Services (HTC) among Women and Men in Nepal: Analysis from Nationally Representative Survey"</p> <p>The authors used data from the Nepal Demographic Health Survey (NDHS) 2016 to assess factors associated with HIV testing and counselling services among women and men in Nepal. The paper could guide interventions to optimize HTC services uptake among the targeted populations. However, the authors should consider the following issues before publication.</p> <p>Abstract</p> <p>It's not clear from the abstract how data were analyzed. Which statistical tests (at which significant level) were used to assess the outcome of interests, especially the primary outcome of the study.</p> <p>L49-52: Please do ensure your conclusions are backed with data presented in the abstract. For example, the statement "there is limited attention in targeted testing to specific sub-groups" is not backed with data presented in the abstract.</p> <p>Methods:</p> <p>P.4. L26-28: "The total of women (n=12,862) and Men (n=4,063) from 11,040 households were interviewed in the survey". This sounds more like results. I would move it to the appropriate section.</p> <p>P.4. L36-41: The definition of the outcome variable is somehow confusing. It's not clear if "having received the test results" was part of the research question? If this was the case, then the outcome variable (L37) should be revised accordingly.</p> <p>P.5. L23: The statement "thus did not require ethical approval" is contradictory since the study was approved by the institutional boards of both Nepal Health Research Council and ICF Macro (L21-</p>
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	<p>23).</p> <p><b>Results</b>  Tables 2 &amp; 3 are too long and extremely hard to follow. I understand this length is in line with the number of variables analyzed. Is there a way authors could reduce this number by retaining only more potentially influential factors on HTC uptake?</p> <p><b>Discussion</b>  P.13. L.17: "It is estimated that around 29,503 are PLHIV, however only 70 percent are currently on ART which falls far short of the UNAIDS goal of 90-90-90 by 2020". This sentence does not read well. It seems there is a missing word somewhere. Please, kindly review and revise accordingly.</p> <p><b>Conclusions</b>  The authors have provided useful information regarding HTC uptake among women and men in Nepal. One of the key findings of this study is that in Nepal women are lagging behind men in terms of HIV testing. However, the conclusion of the study has failed to capture this important information and subsequent recommendations.</p>
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<b>REVIEWER</b>	Seid, Abdu Woldia University, Midwifery
<b>REVIEW RETURNED</b>	30-Apr-2021

<b>GENERAL COMMENTS</b>	<p>General comments:  Thanks for the opportunity to review this important manuscript. Factors Associated with HIV Testing and Counselling Services among Women and Men in Nepal: Analysis from Nationally Representative Survey continues to be an important gap in global health. but your findings are not surprising but they are important to present and can guide policy. I make a number of specific recommendations, to hopefully, improve the paper the journal is very strict with textual plagiarism, Plagiarism ratio is high, I recommend that authors should consider having their manuscripts professionally edited prior to submission; even more so for authors for whom English is a second language.</p> <p><b>introduction</b>  1. The introduction section of the manuscript needs to be improved upon in terms of clarity, the rationale for the study, paragraph connection, and idea expression.  2. How does the present study differ from other study done in Nepal which has been done before? What does the study add to what was already known?</p> <p><b>Methods</b>  1. please show your sampling procedure with a flow chart  2. how did you weight your sample during analysis? did you use a simple logistic regression or a complex since you have been used survey data?</p> <p><b>result</b>  <b>Result and discussion</b>  The discussion needs more in-depth details to emphasize other results aspects.</p> <p><b>References:</b>  - some reference Need Updating</p>
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## VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Dr. Habakkuk A. Yumo, Ludwig Maximilians University Munich

Comments to the Author:

Dear Editor,

Thank you for the opportunity to review the manuscript titled: “ Factors Associated with HIV Testing and Counselling Services (HTC) among Women and Men in Nepal: Analysis from Nationally Representative Survey”

The authors used data from the Nepal Demographic Health Survey (NDHS) 2016 to assess factors associated with HIV testing and counselling services among women and men in Nepal. The paper could guide interventions to optimize HTC services uptake among the targeted populations. However, the authors should consider the following issues before publication.

Abstract

It's not clear from the abstract how data were analysed. Which statistical tests (at which significant level) were used to assess the outcome of interests, especially the primary outcome of the study?

Authors' response: We have added the following details to explain the data analysis methods. Now the line reads as “multivariable analysis in the final model and the statistical significance was set to 0.05 at 95% level of significance.”

L49-52: Please do ensure your conclusions are backed with data presented in the abstract. For example, the statement “there is limited attention in targeted testing to specific sub-groups” is not backed with data presented in the abstract.

Authors' response: Thank you for the suggestion. Now the paragraph has been carefully revised as follows:

“HIV testing is not widespread and more males than females is accessing HIV services. Despite national strategy to roll out PMTCT throughout the country, still, only one-quarter of women who received four ANC received HTC services.’

Methods:

P.4. L26-28: “The total of women (n=12,862) and Men (n=4,063) from 11,040 households were interviewed in the survey”. This sounds more like the results. I would move it to the appropriate section.

Authors' response: As per the suggestion, the above sentence is moved in the result section.

P.4. L36-41: The definition of the outcome variable is somehow confusing. It's not clear if “having received the test results” was part of the research question? If this was the case, then the outcome variable (L37) should be revised accordingly.

Authors' response: We have slightly revised the outcome variable:

The outcome variable for the study was “ever been HIV-tested”, based on a question: ‘I don't want to know the results, but have you ever been tested for HIV? The indicator was defined as having accessed HIV-testing services at least once in their lifetime prior to this survey. This question was asked to both women and men individually through a separate questionnaire.

P.5. L23: The statement “thus did not require ethical approval” is contradictory since the study was approved by the institutional boards of both Nepal Health Research Council and ICF Macro (L21-23).

Authors’ response: The paragraph now reads

“NDHS 2016 was reviewed and approved by the institutional review board Nepal Health Research Council and the institutional review board of ICF Macro International. We used de-identified data publicly available from DHS website (<http://www.dhsprogram.com/data/available-datasets.cfm>) and thus did not require ethical approval for this study. Permission was obtained from the DHS program to use the data for further analysis.”

## Results

Tables 2 & 3 are too long and extremely hard to follow. I understand this length is in line with the number of variables analyzed. Is there a way authors could reduce this number by retaining only more potentially influential factors on HTC uptake?

Authors’ response: Thanks for the suggestion. The size of table 2 has been replaced by maps for effective visualization. Further, the table is split into two tables: first with common variables applicable for both women and men and the second table is for variables specific to women.

For table 3 (now table 4), we have presented only the significant variables in multivariable analysis. The full result of bivariable and multivariable analysis along with footnotes that contain the description of the variables and its constructs are included in supplementary tables 1 and 2.

## Discussion

P.13. L.17: “It is estimated that around 29,503 are PLHIV, however only 70 percent are currently on ART which falls far short of the UNAIDS goal of 90-90-90 by 2020”. This sentence does not read well. It seems there is a missing word somewhere. Please, kindly review and revise accordingly.

Authors’ response: The sentence is revised as follows:

The HIV estimates in 2019 show that there are 29,503 PLHIV in the country, however, only about two-thirds are currently on ART which falls far short of the UNAIDS goal of 90-90-90 by 2020.

## Conclusions

The authors have provided useful information regarding HTC uptake among women and men in Nepal. One of the key findings of this study is that in Nepal women are lagging behind men in terms of HIV testing. However, the conclusion of the study has failed to capture this important information and subsequent recommendations.

Authors’ response: Thanks for raising this important issue. We have revised the conclusion and recommendation section as follows:

“HIV testing is not widespread and more males than females is accessing HIV services. HIV testing is a critical service for women experiencing sexual violence. ....However, only 1 in 10 women experiencing sexual-based violence received HIV testing”.

Reviewer: 2

Mr. Abdu Seid, Woldia University

Comments to the Author:

General comments:

Thanks for the opportunity to review this important manuscript. Factors Associated with HIV Testing and Counselling Services among Women and Men in Nepal: Analysis from Nationally Representative Survey continues to be an important gap in global health. but your findings are not surprising, but they are important to present and can guide policy. I make a number of specific recommendations, to hopefully, improve the paper the journal is very strict with textual plagiarism, Plagiarism ratio is high, I recommend that authors should consider having their manuscripts professionally edited prior to submission; even more so for authors for whom English is a second language.

Introduction

1. The introduction section of the manuscript needs to be improved upon in terms of clarity, the rationale for the study, paragraph connection, and idea expression.

Authors' response: Thanks for the suggestion. As per the suggestion, the introduction portion has been extensively revised.

2. How does the present study differ from other study done in Nepal which has been done before? What does the study add to what was already known?

Authors' response: As per the suggestions, the rationale has been revised to present the current body of evidence and how this study adds-up to earlier studies.

Methods

1. please show your sampling procedure with a flow chart-

Authors' response: Thanks for the suggestion. The flow diagram is attached in the methodology section.

2. how did you weight your sample during analysis? did you use a simple logistic regression or a complex since you have been used survey data?

Authors' response: Thanks for raising an important issue. Variable and Multivariable binary logistic regression analysis was used to obtain the adjusted effects of ever tested HIV for both males and females separately. The following paragraph has been added to elaborate the analysis of survey data:

We used sampling weights (provided in datasets) separately for women and men to adjust for variations in the selection probabilities and interviews. The "svyset" command was used in weighting the data and to account for complex survey design and to provide unbiased estimates. Data analysis was conducted with STATA 15.0 (Stata Corp, College Station Texas, USA).

Result and discussion

The discussion needs more in-depth details to emphasize other results aspects.

Authors' response: The discussion section has been extensively revised and compared with other available and relevant studies.

References:

- some reference Need Updating

Authors' response: Reference has been updated to include the latest sources and added few more references.

### VERSION 2 – REVIEW

<b>REVIEWER</b>	Yumo, Habakkuk A. Ludwig Maximilians University Munich
<b>REVIEW RETURNED</b>	02-Aug-2021

<b>GENERAL COMMENTS</b>	<p>The revised manuscript has improved significantly. However, the paper should be ready for publication once the following minor issues are addressed:</p> <p>1. Abstract: In the conclusion, the sentence " Only a quarter of women who completed four antenatal care visits received HIV testing and counseling" is still not supported by data presented in the abstract.</p> <p>2. Introduction: - the word " HIV" is redundant in the first sentence. - HIV statistics presented are not accurate. Please, revised with the figures presented here: <a href="https://aidsinfo.unaids.org/">https://aidsinfo.unaids.org/</a>.</p> <p>3. Discussion: -L6: I think this sentence should read " More men than woman ever tested for HIV". - L13: Could you explain why the your findings contrast that of the Nairobi?</p>
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### VERSION 2 – AUTHOR RESPONSE

Reviewer: 1

Dr. Habakkuk A. Yumo, Ludwig Maximilians University Munich

Comments to the Author:

The revised manuscript has improved significantly. However, the paper should be ready for publication once the following minor issues are addressed:

Author's response: Thank you for your time. We really appreciate your comments. As per the suggestions; we have addressed the issues raised.

1. Abstract:

In the conclusion, the sentence " Only a quarter of women who completed four antenatal care visits received HIV testing and counseling" is still not supported by data presented in the abstract.

Author's response: Thank you for your suggestion. We have revised it and have added the significant results as;

More than two-thirds of women who delivered at health facilities never tested for HIV.

2. Introduction:

- the word " HIV" is redundant in the first sentence.

Author's response: Thank you for your suggestion. Now it has been fixed.

- HIV statistics presented are not accurate. Please, revised with the figures presented here:  
<https://aidsinfo.unaids.org/>.

Author's response: Thank you for your suggestion. We have revised and have presented the accurate statistics. Please see below;

Globally, HIV is a public health issue with a disproportionate distribution of the epidemics.<sup>1</sup> Worldwide 37.7 million (30.2 million- 45.1 million) people are estimated to have HIV. As of 2020, of all estimated PLHIV, 84% (67->98%) knew their status, 73% (56-88%) were accessing treatment and 66% (53-79%) were virally suppressed in 2020.<sup>2</sup>

3. Discussion:

-L6: I think this sentence should read " More men than woman ever tested for HIV".

Author's response: Thank you for your suggestion. We have revised as per your suggestion.

- L13: Could you explain why the your findings contrast that of the Nairobi?

Author's response: Thank you for your suggestion. This has been addressed by the following statement revised in the manuscript;

The findings from this study are in contrast to the testing behavior in, Nairobi<sup>13</sup>, where women were more likely to get tested than men. This could be explained partly by men's engagement in high risk behavior and high rate of seasonal migration among male in Nepal<sup>14</sup>; high risk perception and better health seeking behavior and access to HTC services. The National HIV Strategic Plan 2016-21 identifies clients of FSWs, and migrants as high-risk populations and various HIV related programs are targeted at improving HIV testing behavior among migrants<sup>4</sup>. In the integrated bio-behavioral surveillance (IBBS) survey conducted among male labour migrants<sup>15</sup>, reported practising high-risk sexual behaviour resulting in heightened risk among their spouses. Similarly, IBBS survey conducted among FSWs and MSM and Transgender people reported 50% of HIV testing coverage <sup>10</sup>. Moreover, IBBS survey among labor migrant and their spouses depicts HTC service utilization of 18.6% and 35% respectively.<sup>16,17</sup>

One of the reasons for more women being tested for HIV in Nairobi is mainly due to the increased testing among women in PMTCT programs. In countries such as India<sup>18</sup> and Seirra Leone<sup>19</sup>, HIV testing was found higher among women who had given birth in the last 5 years and majority of those women who reported testing as part of the ANC services. This reinforces the importance of ANC services for HIV testing among women of reproductive age. Despite the Government of Nepal strategy to expand HIV testing services as part of PMTCT services, not all women who received all 4 ANCs were tested for HIV.

Similarly, other critical area is the HIV services for those surviving sexual violence. Further, women experiencing sexual violence are also being missed from the recommended HIV counselling and testing services; only 10 percent of total women who reported experiencing sexual violence in the recent years had tested for HIV. It is unclear if they even received post exposure prophylaxis (PEP) services as per WHO recommendation<sup>28</sup>. Our findings suggest the need for additional efforts to promote HIV testing among women who experience sexual violence. Consistent with the findings of Zambia,<sup>20</sup> our study showed health facility delivery is correlated with HIV testing. This provides an opportunity to scale up HIV testing among women as more women are now delivering at health facility

in recent years.<sup>21</sup> Special efforts need to be designed to promote HIV testing as part of ANC and institutional delivery services. Further, expansion of HIV testing facilities is critical as only a quarter of government and 30% of private hospitals currently provide HIV testing services.<sup>22</sup>